



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/738,344	12/17/2003	Arianna T. Morales	GP-302303	9697

7590 03/22/2005

Kathryn A. Marra  
300 Renaissance Center  
Mail Code 482-C23-B21  
P.O. Box 300  
Detroit, MI 48265-3000

EXAMINER

ZIMMERMAN, JOHN J

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/738,344	Applicant(s) MORALES ET AL.	
	Examiner John J. Zimmerman	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20031217</u> . | 6) <input type="checkbox"/> Other: ____.  |

## FIRST OFFICE ACTION

### *Information Disclosure Statement*

1. The Information Disclosure Statement received December 17, 2003 has been considered.

An initialed form PTO-1449 is enclosed with this First Office Action.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-5, 11-12 and 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. There is no antecedent basis for "said curvilinear sheet metal" in claim 1 (e.g. see last line). Dependent claims 2-5 incorporate this lack of antecedent basis from the independent claim. Claim 11 recites heating the precursor structure to "a temperature sufficient for superplastic forming" (e.g. see lines 6-7), but fails to require the use of superplastically formable materials for any of the composite structure components in the claim. It is indefinite as to what "a temperature sufficient for superplastic forming" would mean when no superplastically

Art Unit: 1775

formable materials are required by the claim. Dependent claims 12 and 14-16 incorporate this indefiniteness from the independent claim.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2 and 4-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Seeliger (U.S. Patent 6,090,232).

7. Seeliger discloses a metal foam composite having a curvilinear shape (e.g. see column 3, lines 13-17; Figure 2). The foam metal can be made from a metal powder such as alloyed aluminum and light metal alloys (a term used in the metallurgical art to refer to alloys such as aluminum alloys) can be used for the solid metal sheets (e.g. see column 2, lines 14-20). The foam layer can be made by mixing the metal powder with a blowing agent (e.g. see column 2, lines 42-48) to form a foamable semi-finished product. Foam alloys would be expected to have metallic microphases (e.g. applicant's claim 8). Seeliger discloses that his metal foam composite can be used for car body panels in providing crash protection (e.g. see column 4, lines 31-44).

Art Unit: 1775

8. Claims 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Schwartz (U.S. Patent 6,085,965).

9. Schwartz discloses a metal foam composite having a curvilinear shape (e.g. see Figure 2) and wherein the foam core is pressure bonded to the face plates (e.g. see claim 3). The foam metal core and face plates can be aluminum alloys (e.g. see claims 2 and 4). Foam alloys of the types described (e.g. see column 4, lines 33-49) would be expected to have metallic microphases (e.g. applicant's claim 8).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seeliger (U.S. Patent 6,090,232) in view of Baumeister (U.S. Patent 5,151,246) and further in view of Rashid (U.S. Patent 6,253,588).

12. Seeliger discloses a metal foam composite having a curvilinear shape (e.g. see column 3, lines 13-17; Figure 2). The foam metal can be made from a metal powder such as alloyed aluminum and light metal alloys (a term used in the metallurgical art to refer to alloys such as

Art Unit: 1775

aluminum alloys) can be used for the solid metal sheets (e.g. see column 2, lines 14-20). The foam layer can be made by mixing the metal powder with a blowing agent (e.g. see column 2, lines 42-48) to form a foamable semi-finished product. Foam alloys of the types described would be expected to have metallic microphases (e.g. applicant's claim 8). Seeliger may not disclose details of the blowing agent composition and foaming temperatures, but Baumeister shows that these details are well within the purview of those of ordinary skill in the art. Baumeister discloses that the titanium hydride blowing agent with aluminum alloy powders is conventional in the prior art (e.g. see Examples 1-7) and also discloses typical foaming temperatures for various metal powder and blowing agent mixtures. In view of Baumeister, the use of a mixture of aluminum alloy powder with a titanium hydride blowing agent would have been obvious to one of ordinary skill in the art at the time the invention was made for the metal foam composite of Seeliger because Baumeister supplies details on making metal foam compositions and their processing temperatures that Seeliger omits. Seeliger discloses that his metal foam composite can be used for car body panels in providing crash protection (e.g. see column 4, lines 31-44), but may not disclose the use of superplastic forming for the sheet metal in the panels. Rashid, however, discloses that car body panels made with sheet metal can be made more easily using superplastically formable metal materials (e.g. see column 1, first paragraph). Processing steps, forming steps and conditions are disclosed by Rashid (e.g. see claims 1-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use superplastically formable metal materials for the car body panels of Seeliger because Rashid discloses that superplastically formable materials have processing advantages over in car body panel manufacture if complex shapes are needed.

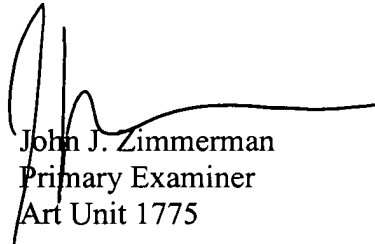
Art Unit: 1775

*Conclusion*

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additionally cited prior art serves to further establish the level of ordinary skill in the art at the time the invention was made.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
John J. Zimmerman  
Primary Examiner  
Art Unit 1775

jjz  
March 14, 2004